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## **1. Systematic review and meta-analysis methodology – Global HIV Burden**

We searched PubMed, Embase, Global Health, SCOPUS, PsycINFO, Sociological Abstracts, CINAHL, POPLINE, and Web of Science for studies published in English between Jan 1, 2006, and September 9, 2017. Articles and citations were reviewed with EndNote (version X6). The search included MeSH terms for HIV or AIDS, and terms associated with sex work (e.g. “prostitute”, “sex work”, “sex worker”, “HIV”, or “AIDS”). The systematic review of peer-reviewed publications was supplemented by a search of other data sources, such as UNAIDs and national surveillance system reports, which included demographic health surveys and integrated biobehavioural surveillance studies. We included studies and reports from countries of low, middle, and high income, with sample sizes greater than 50 female sex workers and of any design that measured the prevalence or incidence of HIV in female sex workers. Studies were accepted if clear descriptions of sampling, biologic HIV testing methods, and analytical methods were included. Studies were excluded if they reported self-reported HIV status, estimates derived from respondent-driven sampling that did not provide sample sizes, and/or provided only weighted estimates. Studies in which female sex workers were not the main focus of the study were included only if results were disaggregated to provide results specific to female sex workers. Data were extracted in duplicate and validated prior to analysis.

Data were analysed to produce pooled prevalence ratio estimates for HIV infection among female sex workers by country and region. Analyses were implemented in Stats Direct 3 (StatsDirect Ltd., Cheshire, UK) using meta-analyses with random effects that incorporated inverse double arcsine square root to calculate the pooled prevalence. All meta-analyses were performed using random effects models, which account for interstudy variation, given the expected heterogeneity between studies. Heterogeneity was assessed using the  $I^2$  statistic, which describes the percentage of variation between studies that is due to heterogeneity rather than chance.

Appendix Table 1. Articles and reports included in the meta-analysis of global HIV burden among sex workers

Region	Country(ies)	Sampling Method	Sample Size	HIV Prevalence	Title	Author	Year of publication
Asia and Pacific	Afghanistan	NR	132	0.0	Mapping and Situation Assessment of Key Populations at High Risk of HIV in Three Cities of Afghanistan	Chase	2008
	Afghanistan	Outreach sampling	520	0.2	HIV, hepatitis B, and hepatitis C prevalence and associated risk behaviors among female sex workers in three Afghan cities	Todd	2010
	Afghanistan	Respondent driven sampling	1,122	0.3	Integrated Biological and Behavioral Surveillance (IBBS) in Selected Cities in Afghanistan	(National Report)	2012
	Australia	NR	6,146	0.0	Testing Commercial Sex Workers for Sexually Transmitted Infections in Victoria, Australia	Chow	2014
	Bangladesh	NR	4,326	0.1	National HIV Serological Surveillance, 2006 Bangladesh	(National Report)	2006
	Bangladesh	Snowball sampling	82	0.0	Vulnerability to HIV infection among sex worker and non-sex worker female injecting drug users in Dhaka, Bangladesh: evidence from the baseline survey of a cohort	Azim	2006
	Bangladesh	NR	4,797	0.3	National HIV Serological Surveillance, 2007 Bangladesh	(National Report)	2007
	Bangladesh	Clinic/Facility-based sampling	4,326	0.1	Bangladesh moves from being a low-prevalence nation for HIV to one with a concentrated epidemic in injecting drug users	Azim	2008
	Bangladesh	NR	3,568	0.2	National HIV Serological Surveillance ,2011 Bangladesh	(National Report)	2011
	Bhutan	Clinic/Facility-based sampling	107	1.9	Providing a gateway to prevention and care for the most at-risk populations in Bhutan: is this being achieved?	Khandu	2014
	Cambodia	NR	2,266	14.0	Report on HIV Sentinel Surveillance in Cambodia 2006	(National Report)	2006
	Cambodia	Time-Location Sampling/Venue-based sampling	160	23.1	Young Women Engaged in Sex Work and Phnom Penh, Cambodia, Have High Incidence of HIV and Sexually Transmitted Infections, and Amphetamine-Type Stimulant Use: New Challenges to HIV Prevention and Risk	Couture	2011
	Cambodia	Snowball sampling	220	15.0	Cervical human papillomavirus infection among young women engaged in sex work in Phnom Penh, Cambodia: prevalence, genotypes, risk factors and association with HIV infection	Couture	2012
	Cambodia	Time-Location Sampling/Venue-based sampling	81	13.6	Condom Negotiation and Use Among Female Sex Workers in Phnom Penh, Cambodia	Bui	2013
	Cambodia	NR	2,564	2.6	Risks for sexually transmitted infections (STIs), HIV, and pregnancy among women working in entertainment establishments in Cambodia	Killam	2013
	Cambodia	NR	183	15.8	Biomarker Validation of Recent Unprotected Sexual Intercourse in a Prospective Study of Young Women Engaged in Sex Work in Phnom Penh, Cambodia	Evans	2013

Region	Country(ies)	Sampling Method	Sample Size	HIV Prevalence	Title	Author	Year of publication
Asia and Pacific	Cambodia	Time-Location Sampling/Venue-based sampling	1,198	7.3	HIV treatment cascade among female entertainment and sex workers in Cambodia: impact of amphetamine use and an HIV prevention program	Muth	2017
	China	Outreach sampling	343	3.8	Syphilis Among Female Sex Workers in Southwestern China: Potential for HIV Transmission	Ruan	2006
	China	Respondent driven sampling	628	21.0	Assessment of Respondent Driven Sampling for Recruiting Female Sex Workers in Two Vietnamese Cities: Reaching the Unseen Sex Worker	Johnston	2006
	China	Time-Location Sampling/Venue-based sampling	293	0.0	Prevalence of HIV and factors associated with risk behaviours among Chinese female sex workers in Hong Kong	Lau	2007
	China	Time-Location Sampling/Venue-based sampling	336	0.0	Variations in Condom Use by Locale: A Comparison of Mobile Chinese Female Sex Workers in Hong Kong and Mainland China	Lau	2007
	China	Outreach sampling	96	8.3	HIV and STIs in Clients and Female Sex Workers in Mining Regions of Gejiu City, China	Xu	2008
	China	Time-Location Sampling/Venue-based sampling	362	2.2	Prevalence of HIV Infection and Predictors for Syphilis Infection among Female Sex Workers in Southern China	Lu	2009
	China	Snowball sampling	281	6.8	Using the Theory of Planned Behavior to investigate condom use behaviors among female injecting drug users who are also sex workers in China	Gu	2009
	China	Outreach sampling	737	10.3	Prevalence and predictors of HIV infection among female sex workers in Kaiyuan City, Yunnan Province, China	Wang	2009
	China	Respondent driven sampling	320	0.0	Prevalence of HIV and STIs and Associated Risk Factors Among Female Sex Workers in Guangdong Province, China	Li	2010
	China	Outreach sampling	1,737	0.2	Long-term follow-up of a comprehensive HIV and sexually transmitted infection prevention program for female sex workers in Ningbo, China	Hong	2010
	China	Snowball sampling	234	6.8	Mental Health and Interpersonal Factors Associated with HIV-Related Risk Behaviors Among Non-Institutionalized Female Injection Drug Users Who Are Also Sex Workers in China	Gu	2010
	China	Outreach sampling	217	0.0	Estimation of Probability of Unprotected Heterosexual Vaginal Transmission of HIV-1 from Clients to Female Sex Workers in Kaiyuan, Yunnan Province, China*	MA	2010
	China	Outreach sampling	270	17.4	Mobility, risk behavior and HIV/STI rates among female sex workers in Kaiyuan City, Yunnan Province, China	Wang	2010
	China	NR	228,484	0.3	The HIV Epidemic in Yunnan Province, China, 1989-2007	Jia	2010
	China	Outreach sampling	9,377	0.1	HIV Among Plasma Donors and Other High-Risk Groups in Henan, China	Li	2010

Region	Country(ies)	Sampling Method	Sample Size	HIV Prevalence	Title	Author	Year of publication
Asia and Pacific	China	Snowball sampling	216	7.9	Prevalence and factors related to syringe sharing behaviours among female injecting drug users who are also sex workers in China	Gu	2011
	China	Time-Location Sampling/Venue-based sampling	1,642	10.2	Factors Associated With HIV Testing History and HIV-Test Result Follow-up Among Female Sex Workers in Two Cities in Yunnan, China	Xu	2011
	China	NR	488	0.8	Epidemiology of Sexually Transmitted Infections, HIV, and Related High-Risk Behaviors among Female Sex Workers in Guangxi Autonomous Region, China	Zhu	2011
	China	NR	2,282	3.5	Knowledge of HIV seropositivity is a predictor for initiation of illicit drug use: Incidence of drug use initiation among female sex workers in a high HIV-prevalence area of China	Wang	2011
	China	Time-Location Sampling/Venue-based sampling	568	11.1	Prevalence and risk behaviours for Chlamydia trachomatis and Neisseria gonorrhoeae infection among female sex workers in an HIV/AIDS high-risk area	Jin	2011
	China	Time-Location Sampling/Venue-based sampling	5,322	0.5	HIV Prevalence Varies Between Female Sex Workers From Different Types of Venues in Southern China	Chen	2012
	China	Respondent driven sampling	318	0.0	Difference in Risk Behaviors and STD Prevalence Between Street-Based and Establishment-Based FSWs in Guangdong Province, China	Li	2012
	China	Snowball sampling	376	4.5	Prevalence and associated factors of condom use during commercial sex by female sex workers who were or were not injecting drug users in China	Lau	2012
	China	Outreach sampling	2,282	10.1	HIV Incidence and Associated Risk Factors Among Female Sex Workers in a High HIV-Prevalence Area of China	Wang	2012
	China	Respondent driven sampling	795	0.0	Consistently Low Prevalence of Syphilis among Female Sex Workers in Jinan, China: Findings from Two Consecutive Respondent Driven Sampling Surveys	Liao	2012
	China	Other	399	12.0	Associations between drug use and risk behaviours for HIV and sexually transmitted infections among female sex workers in Yunnan, China	Yao	2012
	China	NR	345	5.5	Herpes Simplex Virus Type 2 Risks in Female Sex Workers in the China-vietnam Border County of Hekou	Wang	2012
	China	Snowball sampling	201	1.0	Vulnerabilities, health needs and predictors of high-risk sexual behaviour among female adolescent sex workers in Kunming, China	Zhang	2012
	China	Outreach sampling	4,875	12.6	Estimation of Population-Size Changes and HIV Prevalence among Female Sex Workers from 2006 to 2009 in Kaiyuan, Yunnan, China	Wang	2012
	China	Time-Location Sampling/Venue-based sampling	2,453	0.7	Seropositivity and Risk Factors for Herpes Simplex Virus Type 2 Infection among Female Sex Workers in Guangxi, China	Chen	2013
Asia and	China	Time-Location	3,099	0.3	The prevalence of Neisseria gonorrhoeae and Chlamydia	Chen	2013

Region	Country(ies)	Sampling Method	Sample Size	HIV Prevalence	Title	Author	Year of publication
Pacific		Sampling/Venue-based sampling			trachomatis infections among female sex workers in China		
	China	Time-Location Sampling/Venue-based sampling	12,622	1.0	Rates of HIV, syphilis, and HCV infections among different demographic groups of female sex workers in Guangxi China: Evidence from 2010 national sentinel surveillance data	Zhou	2013
	China	Outreach sampling	863	0.3	HIV risk, drug use, and sexual transmission among female sex workers in Ningbo, China	Hong	2013
	China	NR	3,326	0.0	An integrated individual, community, and structural intervention to reduce HIV/STI risks among female sex workers in China	Kang	2013
	China	NR	1,519	0.0	Impact evaluation of a sexually transmitted disease preventive intervention among female sex workers in Hohhot, China	Shi	2013
	China	Other	361	0.0	High prevalence of syphilis among street-based female sex workers in Nanchang, China	Tao	2014
	China	Outreach sampling	781	4.7	High prevalence of HIV and syphilis and associated factors among low-fee female sex workers in mainland China: a cross-sectional study	Zhou	2014
	China	Time-Location Sampling/Venue-based sampling	12,622	1.0	HIV-related Behavioral Risk Factors among Older Female Sex Workers in Guangxi China	Shen	2014
	China	Outreach sampling	187	3.2	Inconsistent Condom Use and History of Trauma Among Vietnamese Female Sex Workers in a Chinese Border Region	Reilly	2014
	China	Time-Location Sampling/Venue-based sampling	6,469	2.1	Screening for Acute HIV Infections and Estimating HIV Incidence among Female Sex Workers from Low-Grade Venues in Guangxi, China	Li	2014
	China	Time-Location Sampling/Venue-based sampling	827,079	0.2	The HIV, Syphilis, and HCV Epidemics Among Female Sex Workers in China: Results From a Serial Cross-Sectional Study Between 2008 and 2012	Wang	2014
	China	Probability sampling	750	0.1	Prevalence and correlates of HIV infection and sexually transmitted infections in female sex workers (FSWs) in Shanghai, China	Remis	2014
	China	Outreach sampling	747	1.1	HIV, Syphilis, and Behavioral Risk Factors among Female Sex Workers before and after Implementation of Harm Reduction Programs in a High Drug-Using Area of China	Zhang	2014
	China	Other	622	1.1	HIV, other sexually transmitted infections, and risk behaviors among female sex workers in Liuzhou, China	Fan	2015
	China	NR	1,888	9.8	Neisseria gonorrhoeae prevalence, incidence and associated risk factors among female sex workers in a high HIV-prevalence area of China	Luo	2015
Asia and Pacific	China	Outreach sampling	734	11.3	Prevalence and correlates of Trichomonas vaginalis infection among female sex workers in a city in Yunnan Province, China	Luo	2015

Region	Country(ies)	Sampling Method	Sample Size	HIV Prevalence	Title	Author	Year of publication
Asia and Pacific	China	Census	12,622	1.0	HIV risk among female sex workers with different patterns of drug use behaviors in Southwest China	Tang	2015
	China	Time-Location Sampling/Venue-based sampling	45,604	2.2	The changing trends of HIV-1 prevalence and incidence from sentinel surveillance of five sub-populations in Yunnan, China, 2001-2010	Yang	2015
	China	Respondent driven sampling	721	0.0	Stigma against HIV/AIDS among female sex workers and general migrant women in eastern China	Yang	2015
	China	Time-Location Sampling/Venue-based sampling	1,026	2.8	Human immunodeficiency virus, syphilis and hepatitis C virus prevalence trends among cross-border migrant Vietnamese female sex workers in Guangxi, China	Zhang	2015
	China	Time-Location Sampling/Venue-based sampling	51,790	1.0	Bridging the Epidemic: A Comprehensive Analysis of Prevalence and Correlates of HIV, Hepatitis C, and Syphilis, and Infection among Female Sex Workers in Guangxi Province, China	Chen	2015
	China	Outreach sampling	120,049	0.9	Declining Inconsistent Condom Use but Increasing HIV and Syphilis Prevalence Among Older Male Clients of Female Sex Workers	Chen	2016
	China	NR	1,487	0.5	Differences in risk behaviours and HIV/STI prevalence between low-fee and medium-fee female sex workers in three provinces in China	Han	2016
	China	Respondent driven sampling	1,245	0.7	Syphilis among middle-aged female sex workers in China: a three-site cross sectional study	Liu	2016
	China	Time-Location Sampling/Venue-based sampling	1,026	3.2	Demographic and behavioral correlates of HIV/ STI among Vietnamese female sex workers in southwest China	Yu	2016
	China	Other	609	0.0	Risk behaviours and prevalences of HIV and sexually transmitted infections among female sex workers in various venues in Changzhou, China	Guo	2017
	Fiji	NR	293	0.0	Integrated Biological Behavioural Surveillance Survey and Size Estimation of Sex Workers in Fiji: HIV Prevention Project	(National Report)	2014
	Hong Kong	Snowball sampling	503	0.2	Sexually Transmitted Infections Among Female Sex Workers in Hong Kong: The Role of Migration Status	Wong	2011
	India	Time-Location Sampling/Venue-based sampling	2,076	5.9	Young age is a risk factor for HIV among female sex workers-An experience from India	Sarkar	2006
	India	Clinic/Facility-based sampling	1,359	54.0	Correlates and Trend of HIV Prevalence Among Female Sex Workers Attending Sexually Transmitted Disease Clinics in Pune, India (1993-2002)	Brahme	2006
	India	Time-Location Sampling/Venue-based sampling	429	26.1	Declines in risk behaviour and sexually transmitted infection prevalence following a community-led HIV preventive intervention among female sex workers in Mysore, India	Reza-Paul	2008

Region	Country(ies)	Sampling Method	Sample Size	HIV Prevalence	Title	Author	Year of publication
Asia and Pacific	India	Outreach sampling	580	11.7	Sex-trafficking, Violence, Negotiating Skill, and HIV Infection in Brothel-based Sex Workers of Eastern India, Adjoining Nepal, Bhutan, and Bangladesh	Sarkar	2008
	India	Time-Location Sampling/Venue-based sampling	10,096	14.5	Determinants of HIV prevalence among female sex workers in four south Indian states: analysis of cross-sectional surveys in twenty-three districts	Ramesh	2008
	India	NR	42,419	4.8	Annual HIV Sentinel Surveillance - Country Report 2008-09	(National Report)	2009
	India	Other	2,213	36.4	Sex work, Syphilis, and Seeking Treatment: An Opportunity for Intervention in HIV Prevention Programming in Karantaka, South India	Mishra	2009
	India	Respondent driven sampling	326	23.6	The burden and determinants of HIV and sexually transmitted infections in a population-based sample of female sex workers in Goa, India	Shahmanesh	2009
	India	Time-Location Sampling/Venue-based sampling	4,712	18.0	Changes in risk behaviours and prevalence of sexually transmitted infections following HIV preventive interventions among female sex workers in five districts in Karnataka state, south India	Ramesh	2010
	India	Probability sampling	3,852	15.3	Violence against female sex workers in Karnataka state, south India: impact on health, and reductions in violence following an intervention	Beattie	2010
	India	Census	1,930	21.5	A Study of Knowledge and Practices Among Commercial Sex Workers Registered Under Jyotisingh ATD Clinic, Ahmedabad	Talsania	2010
	India	NR	2,310	21.3	Factors Associated With Numbers of Client Partners of Female Sex Workers Across Five Districts in South India	Deering	2010
	India	NR	2,400	20.0	STI Levels Decline Among Sex Workers in India After Program Implementation	Ball	2010
	India	NR	13,669	4.6	HIV prevalence in female sex workers in a focused HIV prevention project in Mumbai and Thane District, India	Bhardwaj	2011
	India	Probability sampling	2,228	24.3	Who is at higher risk of STIs and HIV-brothel-based or street-based female sex workers? Evidence from two rounds of bio-behavioural surveys	Gautam	2011
	India	Outreach sampling	4,038	6.1	Assessment of the scale, coverage and outcomes of the Avahan HIV prevention program for female sex workers in Tamil Nadu, India: is there evidence of an effect?	Thilakavathi	2011
	India	Clinic/Facility-based sampling	1,494	3.7	HIV Sentinel Surveillance Among High Risk Groups: Scenario in Gujarat	Chavan	2011
	India	Respondent driven sampling	5,050	26.7	Targeted interventions of the Avahan program and their association with intermediate outcomes among female sex workers in Maharashtra, India	Mainkar	2011
	India	Time-Location Sampling/Venue-based sampling	3,223	16.3	Prevalence of & knowledge, attitude & practices towards HIV & sexually transmitted infections (STIs) among female sex workers (FSWs) in Andhra Pradesh	Hemalatha	2011
	India	NR	1,559	2.2	Rates and determinants of HIV-attributable mortality among	Becker	2012



Region	Country(ies)	Sampling Method	Sample Size	HIV Prevalence	Title	Author	Year of publication
Asia and Pacific					rural female sex workers in Northern Karnataka, India		
	India	Respondent driven sampling	426	13.4	Sexual activity as risk factor for hepatitis C virus (HCV) transmission among the female sex workers in Nagaland	Barua	2012
	India	Probability sampling	10,461	17.1	Index based mapping of high risk behaviours for HIV among female sex workers in India	Joshua	2012
	India	NR	670	11.9	Health risks among female sex workers of Agra, India: Implications for HIV/AIDS/STDs prevention	Hussain	2012
	India	Probability sampling	7,806	11.9	Decline in unprotected sex & sexually transmitted infections (STIs) among female sex workers from repeated behavioural & biological surveys in three southern States of India	Adhikary	2012
	India	Respondent driven sampling	426	13.4	Factors associated with HIV among female sex workers in a high HIV prevalent state of India	Medhi	2012
	India	Clinic/Facility-based sampling	250	42.4	A Study on the HBV and the HCV Infections in the Female Sex Workers and their Co-infection with HIV	Desai	2013
	India	Probability sampling	718	9.3	Demographic changes and trends in risk behaviours, HIV and other sexually transmitted infections among female sex workers in Bangalore, India involved in a focused HIV preventive intervention	Jayaraman	2013
	India	NR	1,279	20.4	Positive impact of a large-scale HIV prevention programme among female sex workers and clients in South India	Boily	2013
	India	Clinic/Facility-based sampling	70,322	0.7	Female sex work interventions and changes in HIV and syphilis infection risks from 2003 to 2008 in India: a repeated cross-sectional study	Arora	2013
	India	Respondent driven sampling	426	11.7	Syphilis infection among female sex workers in Nagaland, Northeast India: analysing their vulnerability to the infection	Medhi	2013
	India	Respondent driven sampling	551	5.1	Sexually Transmitted Infections and Reproductive Health Morbidity in a Cohort of Female Sex Workers Screened for a Microbicide Feasibility Study in Nellore, India	Sarna	2013
	India	Time-Location Sampling/Venue-based sampling	3,225	13.2	The Association between Noncommercial Partnerships and Risk of HIV among Female Sex Workers: Evidences from a Cross-Sectional Behavioral and Biological Survey in Southern India	Somanath	2013
	India	Time-Location Sampling/Venue-based sampling	4,699	18.0	Understanding the role of peer group membership in reducing HIV-related risk and vulnerability among female sex workers in Karnataka, India	Bhattaharjee	2013
	India	Other	100	37.0	HIV/AIDS: Public Health Approach - Special Reference with Female Sex Workers (FSW) in Vellore City- Tamil Nadu	Britto	2013
	India	Respondent driven sampling	417	10.1	Alcohol and condom use among HIV-positive and HIV-negative female sex workers in Nagaland, India	Nuken	2013
	India	Time-Location Sampling/Venue-based sampling	400	66.5	Trends in risk behaviors among female sex workers in south India: Priorities for sustaining the reversal of HIV epidemic	Charles	2013

Region	Country(ies)	Sampling Method	Sample Size	HIV Prevalence	Title	Author	Year of publication
Asia and Pacific	India	Clinic/Facility-based sampling	888	2.4	The Study of seroprevalence of HIV in high risk groups in a tertiary care hospital	Devi	2013
	India	NR	3,873	14.2	Predictors of HIV prevalence among street-based female sex workers in Andhra Pradesh state of India: a district-level analysis	Kumar	2014
	India	NR	11,486	14.2	Increased HIV Prevention Program Coverage and Decline in HIV Prevalence Among Female Sex Workers in South India	Alary	2014
	India	Clinic/Facility-based sampling	300	39.3	HIV Prevalence, Risk Behavior, Knowledge and Beliefs among Women Seeking Care at a Sexually Transmitted Infection Clinic in Mumbai, India	Cooperman	2014
	India	Probability sampling	1,934	10.8	Community Mobilization and Empowerment of Female Sex Workers in Karnataka State, South India: Associations with HIV and Sexually Transmitted Infection Risk	Beattie	2014
	India	Time-Location Sampling/Venue-based sampling	9,667	14.1	Heterosexual Anal Sex among Female Sex Workers in High HIV Prevalence States of India: Need for Comprehensive Intervention	Alexander	2014
	India	Clinic/Facility-based sampling	1,252	7.3	Effect of public-private partnership in treatment of sexually transmitted infections among female sex workers in Andhra Pradesh, India	Kokku	2014
	India	Snowball sampling	200	4.0	A study on STI morbidity pattern and STI treatment seeking behavior among female sex workers of Davangere city, Central Karnataka	Girish	2014
	India	Outreach sampling	14,284	0.2	Evaluation of a Community-Based HIV Preventive Intervention for Female Sex Workers in Rural Areas of Karnataka State, South India	Washington	2014
	India	Outreach sampling	288	0.7	Perception of Sex Workers of Lucknow City, Uttar Pradesh, India towards Sexually Transmitted Infections	Shukla	2015
	India	Time-Location Sampling/Venue-based sampling	405	27.7	Mobility as a Differential Factor of HIV Among Female Sex Workers in Belgaum District, Karnataka, India	Kummarikunta	2015
	India	Other	1,139	3.7	Mobile phones and sex work in South India: The emerging role of mobile phones in condom use by female sex workers in two Indian states	Navani-Vazirani	2015
	India	NR	7,015	15.6	Changes in HIV and syphilis prevalence among female sex workers from three serial cross-sectional surveys in Karnataka state, South India	Isac	2015
	India	Probability sampling	5,792	17.1	Declines in violence and police arrest among female sex workers in Karnataka state, south India, following a comprehensive HIV prevention programme	Beattie	2015
	India	Clinic/Facility-based sampling	300	33.3	Cervical cancer screening and treatment of cervical intraepithelial neoplasia in female sex workers using 'screen and treat' approach	Joshi	2015
	India, Mozambique, Kenya, South	Respondent driven sampling	1,399	33.5	HIV prevention and care-seeking behaviour among female sex workers in four cities in India, Kenya, Mozambique and South Africa	Lafort	2016

Region	Country(ies)	Sampling Method	Sample Size	HIV Prevalence	Title	Author	Year of publication
Africa	Indonesia	Time-Location Sampling/Venue-based sampling	5,947	7.9	Sexual risk behaviours, HIV and other sexually transmitted infections among female sex workers in Indonesia	Magnani	2010
	Indonesia	Time-Location Sampling/Venue-based sampling	2,917	8.2	Is the Bed Capture Enzyme Immunoassay Useful for Surveillance in Concentrated Epidemics? The Case of Female Sex Workers in Indonesia	Morineau	2011
	Indonesia	NR	6,942	8.6	Review of the Health Sector Response to HIV and AIDS in Indonesia	(National Report)	2011
	Indonesia	Clinic/Facility-based sampling	1,537	31.6	Voluntary counseling and testing sites as a source of sentinel information on HIV prevalence in a concentrated epidemic: a pilot project from Indonesia	Guy	2011
	Indonesia	Time-Location Sampling/Venue-based sampling	3,086	0.6	Prevalence over time and risk factors for sexually transmissible infections among newly-arrived female sex workers in Timika, Indonesia	Silitonga	2011
	Indonesia	Time-Location Sampling/Venue-based sampling	200	11.0	High Prevalence of HIV-1 CRF01_AE Viruses among Female Commercial Sex Workers Residing in Surabaya, Indonesia	Kotaki	2013
	Indonesia	Other	346	20.2	Sharply rising prevalence of HIV infection in Bali: a critical assessment of the surveillance data	Januraga	2013
	Indonesia	NR	3,685	10.0	Technical Report: 2013 Sero-Surveillance Survey and 2013 Rapid Behavioral Survey	(National Report)	2013
	Malaysia	Respondent driven sampling	299	19.1	Prevalence of Human Immunodeficiency Virus and Sexually Transmitted Infections Among Cisgender and Transgender Women Sex Workers in Greater Kuala Lumpur, Malaysia: Results From a Respondent-Driven Sampling Study	Wickersham	2017
	Mongolia	Time-Location Sampling/Venue-based sampling	342	0.0	HIV/AIDS Related Knowledge and Risk Behaviors Among Female Sex Workers in Two Major Cities of Mongolia	Enkhbold	2007
	Mongolia	Snowball sampling	179	0.0	Risk Factors and Prevalence of HIV and Sexually Transmitted Infections Among Low-Income Female Commercial Sex Workers in Mongolia	Hagan	2007
	Mongolia	Time-Location Sampling/Venue-based sampling	410	0.0	High-risk status of HIV-1 infection in the very low epidemic country, Mongolia, 2007	Davaalkham	2009
	Mongolia	NR	166	1.2	Reducing Sexual HIV/STI Risk and Harmful Alcohol Use Among Female Sex Workers in Mongolia: A Randomized Clinical Trial	Witte	2011
	Mongolia	NR	761	0.0	Second Generation HIV and STI Surveillance Report, 2011	(National Report)	2011
	Mongolia	Clinic/Facility-	222	0.9	Reducing Intimate and Paying Partner Violence Against	Carlson	2012

Region	Country(ies)	Sampling Method	Sample Size	HIV Prevalence	Title	Author	Year of publication
Asia and Pacific		based sampling			Women Who Exchange Sex in Mongolia: Results From a Randomized Clinical Trial		
	Mongolia	NR	743	0.0	HIV/STI Surveillance Survey Report, 2014	(National Report)	2014
	Myanmar	NR	887	11.4	Results of HIV Sentinel Sero-surveillance 2010 Myanmar	(National Report)	2011
	Myanmar	NR	990	9.4	Results of HIV Sentinel Sero-surveillance 2011 Myanmar	(National Report)	2012
	Myanmar	Time-Location Sampling/Venue-based sampling	136	18.4	HIV prevalence among the female sex workers in major cities in Myanmar and the risk behaviors associated with it	Aung Swe	2013
	Nepal	Other	2,093	1.8	Systematic Differences in HIV, Syphilis and Risk Behaviors among Street Based and Establishment Based Female Sex Workers in Kathmandu Valley of Nepal	Kakchapati	2016
	Nepal	Time-Location Sampling/Venue-based sampling	610	1.0	Micro-level social and structural factors act synergistically to increase HIV risk among Nepalese female sex workers	Deuba	2016
	Nepal	Other	5,958	1.7	Sexual risk behaviors, HIV, and syphilis among female sex workers in Nepal	Kakchapati	2017
	Pakistan	Probability sampling	827	0.2	HIV risk in Karachi and Lahore, Pakistan: an emerging epidemic in injecting and commercial sex networks	Bokhari	2007
	Pakistan	Respondent driven sampling	533	0.0	HIV and other sexually transmitted infections among men, transgenders and women selling sex in two cities in Pakistan: a cross-sectional prevalence survey	Hawkes	2009
	Pakistan	NR	4,271	0.6	HIV Second Generation Surveillance in Pakistan	(National Report)	2011
	Pakistan	Respondent driven sampling	730	0.7	HIV, STI prevalence and risk behaviours among women selling sex in Lahore, Pakistan	Khan	2011
	Pakistan	Time-Location Sampling/Venue-based sampling	1,158	0.3	Size estimation, HIV prevalence and risk behaviours of female sex workers in Pakistan	Altaf	2012
	Pakistan	NR	4,298	0.8	Second-generation surveillance for HIV/AIDS in Pakistan: results from the 4th round of Integrated Behavior and Biological Survey 2011-2012	Emmanuel	2013
	Pakistan	Other	6,987	0.3	Sexual behaviour, structural vulnerabilities and HIV prevalence among female sex workers in Pakistan	Mishra	2013
	Pakistan	NR	1,537	0.5	Integrated Behavioural and Biological Surveillance among Most at Risk Population	(National Report)	2014
	Papua New Guinea	Outreach sampling	129	16.3	A cross-sectional study of reported symptoms for sexually transmissible infections among female sex workers in Papua New Guinea	Bruce	2010
	Papua New Guinea	Outreach	129	8.5	Effects of periodic presumptive treatment on three bacterial	Bruce	2011

Region	Country(ies)	Sampling Method	Sample Size	HIV Prevalence	Title	Author	Year of publication
Asia and Pacific	Guinea	sampling			sexually transmissible infections and HIV among female sex workers in Port Moresby, Papua New Guinea		
	Papua New Guinea	Respondent driven sampling	523	2.7	Prevalence and Correlates of HIV Infection Among Sex Workers in Papua New Guinea: First Results from the Papua New Guinea and Australia Sexual Health Improvement Project (PASHIP)	Wand	2015
	Philippines	NR	9,314	0.4	Integrated HIV Behavioral and Serologic Surveillance	(National Report)	2009
	Philippines	NR	9,534	0.3	Integrated HIV Behavioral and Serologic Surveillance	(National Report)	2011
	Philippines	NR	5,638	0.4	2013 Integrated HIV Behavioral and Serologic Surveillance	(National Report)	2013
	South Korea	Time-Location Sampling/Venue-based sampling	1,083	0.0	Sexual Behavior and Condom Use among Gay Men, Female Sex Workers, and Their Customers: Evidence from South Korea	Jung	2013
	Sri Lanka	NR	1,261	0.8	Integrated Biological and Behavioural Surveillance (IBBS) Survey Among Key Populations at Higher Risk of HIV in Sri Lanka	(National Report)	2015
	Thailand	Clinic/Facility-based sampling	319	15.0	Access to HIV Testing for Sex Workers in Bangkok, Thailand: A High Prevalence of HIV Among Street-based Sex Worker	Nhurod	2010
	Thailand	Respondent driven sampling	707	20.2	Unexpectedly high HIV prevalence among female sex workers in Bangkok, Thailand in a respondent-driven sampling survey	Manopaiboon	2013
	Thailand	Time-Location Sampling/Venue-based sampling	34,313	4.1	Circulation of HIV-1 Multiple Complexity Recombinant Forms Among Female Sex Workers Recently Infected with HIV-1 in Thailand	Saeng-Aroon	2016
	Timor-Leste	NR	100	3.0	Final Report for the Implementing AIDS Prevention and Care (IMPACT) Project in East Timor	(National Report)	2006
	Vanuatu	Respondent driven sampling	118	0.0	Vanuatu Integrated Bio-Behavioural Survey and Population Size Estimation with Female Sex Workers in Port Vila, Vanuatu, 2011	van Gemert	2011
	Vietnam	NR	3,547	8.4	Results from the HIV/STI Integrated Biological and Behavioral Surveillance (IBBS) in Vietnam 2005-2006	(National Report)	2006
	Vietnam	Probability sampling	2,023	12.9	Human immunodeficiency virus (HIV) infection patterns and risk behaviours in different population groups and provinces in Viet Nam	Nguyen	2007
	Vietnam	Time-Location Sampling/Venue-based sampling	982	3.7	Impact of a community sexually transmitted infection/HIV intervention project on female sex workers in five border provinces of Vietnam	Nguyen	2007
	Vietnam	Other	406	3.2	Correlation Between HIV and Sexual Behavior, Drug Use, Trichomoniasis and Candidiasis Among Female Sex Workers in a Mekong Delta Province of Vietnam	Nguyen	2009

Region	Country(ies)	Sampling Method	Sample Size	HIV Prevalence	Title	Author	Year of publication
	Vietnam	Time-Location Sampling/Venue-based sampling	91	23.1	Profile of HIV Type 1 Infection and Genotypic Resistance Mutations to Antiretroviral Drugs in Treatment-Naive HIV Type 1-Infected Individuals in Hai Phong, Viet Nam	Ishizaki	2009
	Vietnam	Time-Location Sampling/Venue-based sampling	91	23.1	Prevalence of HBV Infection Among Different HIV-Risk Groups in Hai Phong, Vietnam	Nguyen	2011
	Vietnam	NR	5,458	8.5	Results from the HIV/STI Integrated Biological and Behavioral Surveillance (IBBS) in Vietnam - Round II 2009	(National Report)	2011
	Vietnam	Outreach sampling	1,999	2.1	HIV Infection, Risk Factors, and Preventive Services Utilization among Female Sex Workers in the Mekong Delta Region of Vietnam	Tran	2014
	Vietnam, China	Other	345	5.5	Analysis of HIV Correlated Factors in Chinese and Vietnamese Female Sex Workers in Hekou, Yunnan Province, a Chinese Border Region	Wang	2015
	Vietnam	Other	5,298	8.0	Correlates of HIV infection among female sex workers in Vietnam: Injection drug use remains a key risk factor	Le	2015
	Vietnam	Other	51	9.8	Change in the Prevalence of HIV-1 and the Rate of Transmitted Drug-Resistant HIV-1 in Haiphong, Northern Vietnam	Viet Pham	2015
	Vietnam	Time-Location Sampling/Venue-based sampling	5,298	8.6	Correlates of HIV infection among street-based and venue-based sex workers in Vietnam	Le	2016
	Vietnam	Time-Location Sampling/Venue-based sampling	420	2.6	Prevalence of HIV Infection and Risk Factors Among Female Sex Workers in a Southeast Province of Vietnam	Nguyen	2016
Eastern and Southern Africa	Botswana	Time-Location Sampling/Venue-based sampling	947	61.9	HIV Prevalence and Risk Behaviors Among Female Sex Workers in Botswana: Results from the 2012 HIV/STI Bio-Behavioral Study	Merrigan	2015
	Botswana	Respondent driven sampling	875	54.9	Performance of Rapid HIV Testing by Lay Counselors in the Field During the Behavioral and Biological Surveillance Survey Among Female Sex Workers and Men Who Have Sex With Men in Botswana	Mine	2015
	Comoros	NR	83	0.0	The Indian Ocean paradox revisited: HIV and sexually transmitted infections in the Comoros	Dada	2007
Eastern and Southern Africa	Eritrea	Probability sampling	272	8.1	HIV and syphilis prevalence and HIV risk behavior survey in Commercial Sex Workers in Asmara, Eritrea	(National Report)	2007
	Eritrea	Respondent driven sampling	709	10.4	HIV, HSV-2, HBsAg, HCV Ab and Syphilis Prevalence and HIV Risk Behavior Survey among Female Sex Workers in Eritrea-2014	Asmara	2014
	Ethiopia	Probability sampling	319	11.9	Prevalence and factors associated with HIV and Hepatitis B virus infections among female commercial sex workers in Mekelle, Ethiopia: Cross Sectional Study	Bugssa	2015
	Kenya	Snowball	698	35.7	Heavy episodic drinking among Kenyan female sex workers	Chersich	2007

Region	Country(ies)	Sampling Method	Sample Size	HIV Prevalence	Title	Author	Year of publication
		sampling			is associated with unsafe sex, sexual violence and sexually transmitted infections		
	Kenya	Clinic/Facility-based sampling	299	29.1	Mycoplasma genitalium Infection and Persistence in a Cohort of Female Sex Workers in Nairobi, Kenya	Cohen	2007
	Kenya	Clinic/Facility-based sampling	2,283	56.0	Reduced rates of HIV acquisition during unprotected sex by Kenyan female sex workers predating population declines in HIV prevalence	Kimani	2008
	Kenya	Snowball sampling	1,009	31.4	Impact of five years of peer-mediated interventions on sexual behavior and sexually transmitted infections among female sex workers in Mombasa, Kenya	Luchters	2008
	Kenya	Snowball sampling	820	34.5	Association of HIV infection with distribution and viral load of HPV types in Kenya: a survey with 820 female sex workers	Luchters	2010
	Kenya	NR	898	66.8	Association Between Participant Self-Report and Biological Outcomes Used to Measure Sexual Risk Behavior in Human Immunodeficiency Virus-1-Seropositive Female Sex Workers in Mombasa, Kenya	McClelland	2011
	Kenya, Rwanda	Time-Location Sampling/Venue-based sampling	1,620	29.3	Anal intercourse among female sex workers in East Africa is associated with other high-risk behaviours for HIV	Veldhuijzen	2011
	Kenya	NR	593	29.3	2010-2011 Integrated Biological and Behavioural Surveillance Survey among Key Populations in Nairobi and Kisumu, Kenya	(National Report)	2011
	Kenya, Tanzania, Uganda	NR	1,158	3.2	Pattern of HIV risk behavior in a cohort of high risk women in East Africa	Kibuuka	2012
	Kenya	NR	59	33.9	Feasibility and Safety of Cervical Biopsy Sampling for Mucosal Immune Studies in Female Sex Workers from Nairobi, Kenya	Hasselrot	2012
	Kenya	Clinic/Facility-based sampling	1,182	51.9	Prevalence and Correlates of Genital Warts in Kenyan Female Sex Workers	Kavanaugh	2012
	Kenya	Snowball sampling	350	24.0	Prevalence and incidence of cervical intra-epithelial neoplasia among female sex workers in Korogocho, Kenya	Njagi	2013
	Kenya	Respondent driven sampling	479	57.8	Prevalence of HIV and Other Sexually Transmitted Infections among Female Sex Workers in Kisumu, Western Kenya, 1997 and 2008	Vandenhoudt	2013
Eastern and Southern Africa	Kenya	Census	277	10.1	Populations at Increased Risk for HIV Infection in Kenya: Results From a National Population-Based Household Survey, 2012	Githuka	2014
	Kenya	Time-Location Sampling/Venue-based sampling	818	20.2	A Randomized Controlled Trial of a Brief Intervention to Reduce Alcohol Use Among Female Sex Workers in Mombasa, Kenya	L'Engle	2014
	Kenya	Clinic/Facility-based sampling	474	29.3	Association Between Alcohol Use and Sexually Transmitted Infection Incidence Among Kenyan Women Engaged in	Wilson	2014

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Eastern and Southern Africa	Kenya	Census	278	10.1	Transactional Sex Populations at Increased Risk for HIV Infection in Kenya: Results from a National Population-Based Household Survey, 2012	Githuka	2014
					Levels of alcohol use and history of HIV testing among female sex workers in Mombasa, Kenya	Bengtson	2014
					Effects of hazardous and harmful alcohol use on HIV incidence and sexual behaviour: a cohort study of Kenyan female sex workers	Chersich	2014
					Prevalence of HIV, Sexually Transmitted Infections, and Risk Behaviours Among Female Sex Workers in Nairobi, Kenya: Results of a Respondent Driven Sampling Study	Musyoki	2015
					Mucosal Blood Group Antigen Expression Profiles and HIV Infections: A Study among Female Sex Workers in Kenya	Chanzu	2015
					Risk of sexual, physical and verbal assaults on men who have sex with men and female sex workers in coastal Kenya	Micheni	2015
					Early sex work initiation and condom use among alcohol-using female sex workers in Mombasa, Kenya: a cross-sectional analysis	Parcesepe	2016
					The impact of an alcohol harm reduction intervention on interpersonal violence and engagement in sex work among female sex workers in Mombasa, Kenya: Results from a randomized controlled trial	Parcesepe	2016
					The relationship between health worker stigma and uptake of HIV counseling and testing and utilization of non-HIV health services: the experience of male and female sex workers in Kenya	Nyblade	2017
	Madagascar	Outreach sampling	100	0.0	Prevalence of and risk factors for sexually-transmitted infections in hidden female sex workers	Harijaona	2009
	Malawi	NR	378	51.1	Biological and Behavioral Surveillance Survey 2006 and Comparative Analysis of 2004 BSS and 2006 BBSS	(National Report)	2006
	Malawi	Time-Location Sampling/Venue-based sampling	200	69.0	The HIV Care Continuum among Female Sex Workers: A Key Population in Lilongwe, Malawi	Lancaster	2016
	Mauritius	NR	295	32.2	Integrated Behavioral and Biological Surveillance Survey among Female Sex Workers	(National Report)	2010
	Mauritius	NR	400	24.3	Integrated Biological and Behavioral Studies among Female Sex Workers	(National Report)	2012
	Mauritius	Respondent driven sampling	299	32.4	Unexpectedly High Injection Drug Use, HIV and Hepatitis C Prevalence Among Female Sex Workers in the Republic of Mauritius	Johnston	2013
	Mozambique	NR	236	12.7	HIV Risk Perception and Behavior among Sex Workers in Three Major Urban Centers of Mozambique	Langa	2014
	Mozambique	Respondent	1,240	27.5	Socio-demographic, Behavioral and Health Characteristics of	Inguane	2015



Region	Country(ies)	Sampling Method	Sample Size	HIV Prevalence	Title	Author	Year of publication
Eastern and Southern Africa		driven sampling			Underage Female Sex Workers in Mozambique: The Need to Protect a Generation from HIV Risk		
	Mozambique	Respondent driven sampling	1,240	27.3	High Burden of HIV Infection and Risk Behaviors Among Female Sex Workers in Three Main Urban Areas of Mozambique	Augusto	2016
	Mozambique	Respondent driven sampling	311	41.2	Barriers to HIV and sexual and reproductive health care for female sex workers in Tete, Mozambique: results from a cross-sectional survey and focus group discussions	Lafort	2016
	Rwanda	NR	1,338	42.2	Behavioral and Biological Surveillance Survey Among Female Sex Workers, Rwanda - 2010	(National Report)	2010
	Rwanda	NR	397	0.0	High Human Immunodeficiency Virus Incidence in a Cohort of Rwandan Female Sex Workers	Braunstein	2011
	Rwanda	Clinic/Facility-based sampling	800	24.0	HIV Diagnosis, Linkage to HIV Care, and HIV Risk Behaviors Among Newly Diagnosed HIV-Positive Female Sex Workers in Kigali, Rwanda	Braunstein	2011
	Rwanda	Time-Location Sampling/Venue-based sampling	1,338	42.2	High HIV prevalence and associated risk factors among female sex workers in Rwanda	Mutagoma	2017
	South Africa	Time-Location Sampling/Venue-based sampling	88	28.4	High-Risk Human Papillomavirus Is Associated with HIV Acquisition among South African Female Sex Workers	Auvert	2011
	South Africa	Time-Location Sampling/Venue-based sampling	189	51.9	Alcohol, Drug and Sexual Risk Behavior Correlates of Recent Transactional Sex Among Female Black South African Drug Users	Hedden	2011
	South Africa	Outreach sampling	1,077	11.8	Transactional Sex and HIV Incidence in a Cohort of Young Women in the Stepping Stones Trial	Jewkes	2012
	South Africa	NR	2,180	57.7	SAHMS Final Report: Survey on female sex workers in South Africa 2013-2014	(National Report)	2014
	South Africa	Other	225	12.0	Alcohol Use and Transactional Sex among Women in South Africa: Results from a Nationally Representative Survey	Magni	2015
	South Africa	Time-Location Sampling/Venue-based sampling	646	29.3	Sexual HIV risk among substance-using female commercial sex workers in Durban, South Africa	Carney	2015
	South Africa	Clinic/Facility-based sampling	268	76.1	Surveillance for sexually transmitted infections among female sex workers in Hillbrow, Johannesburg	Black	2015
	South Africa	Respondent driven sampling	711	8.3	The Relationship Between Social Support, HIV Serostatus, and Perceived Likelihood of Being HIV Positive Among Self-Settled Female, Foreign Migrants in Cape Town, South Africa	Giorgio	2016
	South Africa	NR	249	75.1	Field evaluation of Standard Diagnostics' Bioline HIV/Syphilis Duo test among female sex workers in Johannesburg, South Africa	Black	2016

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Eastern and Southern Africa	South Africa	Respondent driven sampling	391	63.7	Pregnancy Intentions and Safer Pregnancy Knowledge Among Female Sex Workers in Port Elizabeth, South Africa	Rao	2016
	South Africa	Clinic/Facility-based sampling	1,830	43.0	Sexual and reproductive health outcomes among female sex workers in Johannesburg and Pretoria, South Africa: Recommendations for public health programmes	Slabbert	2017
	South Africa	Respondent driven sampling	410	63.7	Engagement in the HIV care cascade and barriers to antiretroviral therapy uptake among female sex workers in Port Elizabeth, South Africa: findings from a respondent-driven sampling study	Schwartz	2017
	Swaziland	Respondent driven sampling	325	54.2	Association Between Condom Use and Use of Other Contraceptive Methods Among Female Sex Workers in Swaziland: A Relationship-Level Analysis of Condom and Contraceptive Use	Yam	2013
	Swaziland	Respondent driven sampling	317	70.3	Reconceptualizing the HIV Epidemiology and Prevention Needs of Female Sex Workers (FSW) in Swaziland	Baral	2014
	Swaziland	Respondent driven sampling	325	68.6	Social Cohesion, Social Participation, and HIV Related Risk among Female Sex Workers in Swaziland	Fonner	2014
	Swaziland	NR	781	60.7	Characterizing the HIV Prevention and Treatment Needs among Key Populations, including Men who Have Sex with Men and Female Sex Workers in Swaziland: From Evidence to Action	(National Report)	2015
	Swaziland	Respondent driven sampling	325	68.3	The Prevalence and Correlates of Physical and Sexual Violence Affecting Female Sex Workers in Swaziland	Berger	2016
	Tanzania	Time-Location Sampling/Venue-based sampling	600	67.0	Decline in sexually transmitted infection prevalence and HIV incidence in female barworkers attending prevention and care services in Mbeya Region, Tanzania	Riedner	2006
	Tanzania	Time-Location Sampling/Venue-based sampling	493	41.2	Project Shikamana: Baseline Findings from a Community EMpowerment-Based Combination HIV prevention trial among female sex workers in Iringa, Tanzania	Kerrigan	2017
	Uganda	Time-Location Sampling/Venue-based sampling	1,027	37.2	HIV and other sexually transmitted infections in a cohort of women involved in high-risk sexual behavior in Kampala, Uganda	Vandepitte	2011
	Uganda	Time-Location Sampling/Venue-based sampling	905	37.0	Condom use among female sex workers in Uganda	Bukenya	2013
	Uganda	Clinic/Facility-based sampling	1,027	66.5	Rates of HIV-1 superinfection and primary HIV-1 infection are similar in female sex workers in Uganda	Redd	2014
	Uganda	NR	1,027	37.1	Association between Mycoplasma genitalium infection and HIV acquisition among female sex workers in Uganda: evidence from a nested case-control study	Vandepitte	2014
	Uganda	Time-Location Sampling/Venue-	400	22.3	Structural determinants of dual contraceptive use among female sex workers in Gulu, northern Uganda	Erickson	2015

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		based sampling					
	Uganda	Probability sampling	105	11.4	Transactional sex and HIV risks - evidence from a cross-sectional national survey among young people in Uganda	Choudhry	2015
	Uganda	Clinic/Facility-based sampling	400	33.8	Policing the epidemic: High burden of workplace violence among female sex workers in conflict-affected northern Uganda	Muldoon	2015
	Uganda	Clinic/Facility-based sampling	81	22.2	Prevalence of HIV and Associated Risks of Sex Work among Youth in the Slums of Kampala	Swahn	2016
	Uganda	NR	1,027	37.2	Bacterial vaginosis among women at high risk for HIV in Uganda: high rate of recurrent diagnosis despite treatment	Francis	2016
	Uganda	Clinic/Facility-based sampling	241	46.1	Acceptance of Treatment of Sexually Transmitted Infections for Stable Sexual Partners by Female Sex Workers in Kampala, Uganda	Mayanja	2016
	Uganda	Time-Location Sampling/Venue-based sampling	400	38.5	Incarceration and exposure to internally displaced persons camps associated with reproductive rights abuses among sex workers in northern Uganda	Erickson	2017
	Uganda	Time-Location Sampling/Venue-based sampling	379	32.5	Interpersonal and structural contexts of intimate partner violence among female sex workers in conflict-affected Northern Uganda	Erickson	2017
	Uganda	Respondent driven sampling	942	34.3	Burden and characteristics of HIV infection among female sex workers in Kampala, Uganda- a respondent-driven sampling survey	Hladik	2017
	Zimbabwe	Respondent driven sampling	575	56.3	Engagement with HIV Prevention Treatment and Care among Female Sex Workers in Zimbabwe: a Respondent Driven Sampling Survey	Cowan	2013
	Zimbabwe	Snowball sampling	545	48.8	The Social Organization of Sex Work in Rural Eastern Zimbabwe and its Implications for HIV Infection	Elmes	2013
	Zimbabwe	Clinic/Facility-based sampling	13,360	24.8	Cohort Analysis of Program Data to Estimate HIV Incidence and Uptake of HIV-Related Services Among Female Sex Workers in Zimbabwe, 2009-2014	Hargreaves	2016
Eastern Europe Central Asia	Zimbabwe	Respondent driven sampling	2,722	57.5	The HIV Care Cascade Among Female Sex Workers in Zimbabwe: Results of a Population-Based Survey from the Sisters Antiretroviral Therapy Programme for Prevention of HIV, an Integrated Response(SAPPH-IRE) Trial	Cowan	2017
	Albania	Respondent driven sampling	92	1.1	Behavioral risk factors and prevalence of HIV and other STIs among female sex workers in Tirana, Albania	Qyra	2011
	Armenia	NR	300	1.3	Prevalence of STI/HIV and Assessment of Risky Behaviours Among Sex Workers	Asmaryan	2013
	Armenia	Respondent driven sampling	300	1.3	HIV/STI Bio-Behavioral Characteristics of Key Populations at Higher Risk	Grigoryan	2013
	Azerbaijan	NR	300	1.7	Prevalence of HIV, Hepatitis and Syphilis, and Behavioural Risk Factors Among Most-At-Risk Groups in the Republic of Azerbaijan	(National Report)	2008

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Eastern Europe Central Asia	Bosnia and Herzegovina	NR	154	0.0	Research of Risk Behavior with Regard to HIV Prevalence in Groups at Increased Risk	Ravlija	2011
	Georgia	Time-Location Sampling/Venue-based sampling	120	0.8	Characteristics, High-Risk Behaviors and Knowledge of STI/HIV/AIDS and STI/HIV Prevalence of Facility-based Female Sex Workers in Batumi, Georgia: 2004 - 2006	Dershem	2007
	Moldova	Respondent driven sampling	658	16.3	Determinants of HIV Infection Among Female Sex Workers in Two Cities in the Republic of Moldova: The Role of Injection Drug Use and Sexual Risk	Zohrabyan	2013
	Montenegro	Snowball sampling	142	0.0	Factors associated with inconsistent condom use with clients among female sex workers in Podgorica, Montenegro	Laušević	2016
	Russia	Clinic/Facility-based sampling	147	4.8	Injection drug use, sexual risk, violence and STI/HIV among Moscow female sex workers	Decker	2012
	Russia	Time-Location Sampling/Venue-based sampling	139	33.8	Motivators and barriers to HIV testing among street-based female sex workers in St. Petersburg, Russia	King	2015
	Russia	Clinic/Facility-based sampling	207	54.6	Association between Pregnancy and Active Injection Drug Use and Sex Work among Women Injection Drug Users in Saint Petersburg, Russia	Girchenko	2015
	Russia	Respondent driven sampling	754	3.8	Current and recent drug use intensifies sexual and structural HIV risk outcomes among female sex workers in the Russian Federation	Wirtz	2015
	Ukraine	NR	1,602	6.4	Monitoring behavior of female commercial sex workers	(National Report)	2007
	Ukraine	NR	1,619	17.0	Monitoring Behavior of Female Sex-Workers (FSWs) As a Component of Second Generation Epidemiological Survey in 16 Cities of Ukraine	(National Report)	2008
	Ukraine	NR	2,278	12.9	Behavioural Monitoring and HIV Infection Prevalence Among Female Sex Workers as a Component of Second Generation Surveillance	(National Report)	2009
	Ukraine	Respondent driven sampling	2,465	23.7	Engagement in sex work does not increase HIV risk for women who inject drugs in Ukraine	Vasylyeva	2016
	Ukraine	Respondent driven sampling	4,764	5.7	Correlates of HIV and Inconsistent Condom Use Among Female Sex Workers in Ukraine	Iakunchykova	2016
	Uzbekistan	Snowball sampling	448	10.0	Prevalence and Correlates of Human Immunodeficiency Virus Infection Among Female Sex Workers in Tashkent, Uzbekistan	Todd	2006
	Uzbekistan	Outreach sampling	448	10.0	Sexually transmitted disease symptom management behaviours among female sex workers in Tashkent, Uzbekistan	Alibayeva	2007
	Uzbekistan	Clinic/Facility-based sampling	329	7.0	Prevalence and Factors Associated With Human Immunodeficiency Virus Infection Among Sex Workers in Samarkand, Uzbekistan	Todd	2009
Latin	Belize	NR	220	0.9	Central American Behavioural Seroprevalence Survey of HIV	Manzanero	2012

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America and Caribbean	Belize	Census	220	0.9	and other STIs in More Vulnerable Populations: Sex workers, men who have sex with men and persons with HIV Results of the first HIV prevalence and risk behaviour study among female sex workers, Belize, 2012	Rodriquez	2013
	Bolivia, Ecuador, Uruguay, Argentina	Time-Location Sampling/Venue-based sampling	1,845	2.0	Immigration Status and HIV-risk Related Behaviors among Female Sex Workers in South America	Bautista	2007
	Brazil	Clinic/Facility-based sampling	90	6.7	HIV genotyping among female sex workers in the State of Santa Catarina	Schuelter-Trevisol	2007
	Brazil	Respondent driven sampling	2,523	4.8	Analysis of Data Collected by RDS Among Sex Workers in 10 Brazilian Cities, 2009: Estimation of the Prevalence of HIV, Variance, and Design Effect	Szwarcwald	2011
	Brazil	Clinic/Facility-based sampling	147	8.8	HIV, hepatitis B and C, and syphilis prevalence and coinfection among sex workers in Southern Brazil	Sheulter-Trevisol	2013
	Brazil	Respondent driven sampling	2,523	5.0	HIV risk practices by female sex workers according to workplace	Damacena	2014
	Brazil	Respondent driven sampling	402	1.0	HIV seroprevalence and high-risk sexual behavior among female sex workers in Central Brazil	Fernandes	2014
	Brazil	Time-Location Sampling/Venue-based sampling	5,848	1.9	Point-of-care HIV tests done by peers, Brazil	Pascom	2016
	Chile	Clinic/Facility-based sampling	626	0.0	HIV prevalence, AIDS knowledge, and condom use among female sex workers in Santiago, Chile	Barrientos	2007
	Dominican Republic	NR	482	3.9	Comparison of Methods to Detect Recent HIV Type 1 Infection in Cross-Sectionally Collected Specimens from a Cohort of Female Sex Workers in the Dominican Republic	Gupta	2007
	Dominican Republic, Haiti, Fiji	Clinic/Facility-based sampling	799	5.8	Recruitment of Caribbean female commercial sex workers at high risk of HIV infection	Deschamps	2013
	Dominican Republic	Respondent driven sampling	2,781	4.1	Associations of HIV Testing, Sexual Risk and Access to Prevention Among Female Sex Workers in the Dominican Republic	Johnston	2017
Latin America and Caribbean	Ecuador	NR	1,136	5.1	Effects of the Frontiers Prevention Project in Ecuador on sexual behaviours and sexually transmitted infections amongst men who have sex with men and female sex workers: challenges on evaluating complex interventions	Gutierrez	2013
	El Salvador, Guatemala, Nicaragua, Panama	Outreach sampling	2,466	3.6	Sentinel Surveillance of Sexually Transmitted Infections/HIV and Risk Behaviors in Vulnerable Populations in 5 Central American Countries	Soto	2007

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Latin America and Caribbean	Guatemala	Time-Location Sampling/Venue-based sampling	599	4.5	Comparison of users of an HIV/syphilis screening community-based mobile van and traditional voluntary counselling and testing sites in Guatemala	Lahuerta	2011
	Guatemala	Clinic/Facility-based sampling	2,557	4.8	Sentinel Surveillance and Prevention of Sexually Transmitted Infections Among Female Sex Workers in Guatemala: First Findings from Victis	Galindo	2013
	Guyana	Time-Location Sampling/Venue-based sampling	299	25.8	Sexually Transmitted Infection Service Use and Risk Factors for HIV Infection Among Female Sex Workers in Georgetown, Guyana	Allen	2006
	Guyana	NR	211	5.7	Guyana Biobehavioral Surveillance Survey (BBSS)	(National Report)	2014
	Honduras	Clinic/Facility-based sampling	1,041	2.6	Declining sexually transmitted infections among female sex workers: the results of an HIV and sexually transmitted infection prevention strategy in Honduras, 2006-08	Tinajeros	2012
	Honduras	Respondent driven sampling	790	2.4	HIV Incidence Among Vulnerable Populations in Honduras: Results from an Integrated Behavioral and Biological Survey Among Female Sex Workers, Men Who Have Sex with Men, and Garifuna in Honduras, 2006	Kim	2013
	Jamaica	Snowball sampling	450	9.1	HIV Prevalence and Related Behaviors Among Sex Workers in Jamaica	Duncan	2010
	Jamaica	NR	373	4.6	Survey of PLACE Patrons, PLACE Workers, and Men Who Have Sex with Men	(National Report)	2012
	Jamaica	Snowball sampling	276	5.1	STI Prevalence and Risk Behaviors among Establishment-based and Street-based Sex Workers in Jamaica	Duncan	2014
	Mexico	Clinic/Facility-based sampling	924	6.0	Characteristics of Female Sex Workers With US Clients in Two Mexico-US Border Cities	Strathdee	2008
	Mexico	Time-Location Sampling/Venue-based sampling	474	7.6	Distribution of Sexually Transmitted Diseases and Risk Factors by Work Locations Among Female Sex Workers in Tijuana, Mexico	Rusch	2010
	Mexico	Outreach sampling	300	5.3	Intimate Partner Violence among Female Sex Workers in Two Mexico-U.S. Border Cities: Partner Characteristics and HIV Risk-behaviors as Correlates of Abuse	Ulibarri	2010
	Mexico	NR	187	7.0	Effects of government registration on unprotected sex amongst female sex workers in Tijuana; Mexico	Sirotin	2010
	Mexico	Outreach sampling	410	6.1	A Comparison of Registered and Unregistered Female Sex Workers in Tijuana, Mexico	Sirotin	2010
	Mexico	NR	620	5.3	Social and Structural Factors Associated with HIV Infection among Female Sex Workers Who Inject Drugs in the Mexico-US Border Region	Strathdee	2011
	Mexico	Outreach sampling	924	6.0	Injection drug use as a mediator between client-perpetrated abuse and hiv status among female sex workers in two mexico-us border cities	Ulibarri	2011

Region	Country(ies)	Sampling Method	Sample Size	HIV Prevalence	Title	Author	Year of publication
Latin America and Caribbean	Mexico	Time-Location Sampling/Venue-based sampling	126	2.4	Prevalence and correlates of sexual risk among male and female sex workers in Tijuana, Mexico	Katsulis	2012
	Mexico	Outreach sampling	621	5.3	Prevalence and Correlates of Female Condom Use and Interest Among Injection Drug-Using Female Sex Workers in Two Mexico-US Border Cities	Stockman	2012
	Mexico	Time-Location Sampling/Venue-based sampling	624	5.4	Mexico's northern border conflict: collateral damage to health and human rights of vulnerable groups	Beletsky	2012
	Mexico	NR	24	4.2	Situating HIV risk in the lives of formerly trafficked female sex workers on the Mexico-US border	Collins	2012
	Mexico	Outreach sampling	924	6.0	Reducing harm from HIV/AIDS misconceptions among female sex workers in Tijuana and Ciudad Juarez, Mexico: A cross sectional analysis	Robertson	2012
	Mexico	NR	362	5.5	Condom use among female sex workers and their non-commercial partners: effects of a sexual risk intervention in two Mexican cities	Ulibarri	2012
	Mexico	Snowball sampling	214	4.2	Individual, Interpersonal, and Social-Structural Correlates of Involuntary Sex Exchange Among Female Sex Workers in Two Mexico-U.S. Border Cities	Goldenberg	2013
	Mexico	Outreach sampling	582	5.7	Adverse Pregnancy Outcomes and Sexual Violence Among Female Sex Workers Who Inject Drugs on the United States-Mexico Border	McDougal	2013
	Mexico	NR	343	7.0	The Effect of Geography on HIV and Sexually Transmitted Infections in Tijuana's Red Light District	Gaines	2013
	Mexico	Snowball sampling	212	12.7	Prevalence and correlates of HIV and sexually transmitted infections among female sex workers and their non-commercial male partners in two Mexico-USA border cities	Robertson	2014
	Mexico	NR	156	3.2	DEFBI 5'UTR Polymorphisms Modulate the Risk of HIV-1 Infection in Mexican Women	Estrada-Aguirre	2014
	Mexico	Outreach sampling	924	5.8	Prevalence and correlates of client-perpetrated abuse among female sex workers in two Mexico-U.S. border cities	Ulibarri	2014
	Mexico	Time-Location Sampling/Venue-based sampling	131	2.3	Predictors of Workplace Violence Among Female Sex Workers in Tijuana, Mexico	Katsulis	2015
	Mexico	Time-Location Sampling/Venue-based sampling	181	5.5	STI/HIV test result disclosure between female sex workers and their primary, non-commercial male partners in two Mexico-US border cities: a prospective study	Pines	2015
	Mexico	Snowball sampling	212	5.2	Incidence and Predictors of HIV and Sexually Transmitted Infections Among Female Sex Workers and Their Intimate Male Partners in Northern Mexico: A Longitudinal, Multilevel Study	Bazzi	2015
	Mexico	Time-Location	496	3.0	Structural Determinants of Client Perpetrated Violence Among Female Sex Workers in Two Mexico-U.S. Border	Connors	2016

Region	Country(ies)	Sampling Method	Sample Size	HIV Prevalence	Title	Author	Year of publication
Latin America and Caribbean		Sampling/Venue-based sampling			Cities		
	Nicaragua	NR	832	1.9	Central American Surveillance Survey of Sexual Behavior and Prevalence of HIV/STIs in Vulnerable Populations: Female Sex Workers, Nicaragua, 2009	Delgado	2011
	Panama	Time-Location Sampling/Venue-based sampling	999	0.7	Prevalence of HIV and other sexually transmitted infections and factors associated with syphilis among female sex workers in Panama	Hakre	2013
	Paraguay	Time-Location Sampling/Venue-based sampling	723	2.8	Epidemiological and molecular characteristics of HIV-1 infection among female commercial sex workers, men who have sex with men and people living with AIDS in Paraguay	Aguayo	2008
	Paraguay, Dominican Republic, Brazil, Peru, Uruguay	Time-Location Sampling/Venue-based sampling	625	3.2	Sexual Practices, Drug Use Behaviors, and Prevalence of HIV, Syphilis, Hepatitis B and C, and HTLV-1/2 in Immigrant and Non-immigrant Female Sex Workers in Argentina	Bautista	2009
	Paraguay	Time-Location Sampling/Venue-based sampling	432	2.8	HIV and Syphilis Infection and Risk Behaviors Among Female Sex Workers in Paraguay in 2012	Aguilar	2013
	Peru	Census	4,485	0.7	Prevalences of sexually transmitted infections in young adults and female sex workers in Peru: a national population-based survey	Carcamo	2012
	Peru	Time-Location Sampling/Venue-based sampling	212	2.4	Genital Tract Infections, Bacterial Vaginosis, HIV, and Reproductive Health Issues among Lima-Based Clandestine Female Sex Workers	Perla	2012
	Venezuela	Time-Location Sampling/Venue-based sampling	613	0.0	Assessment of Human Immunodeficiency Virus Type 1 and Risk Practices Among Female Commercial Sex Workers in Isla Margarita, Venezuela	Munoz	2006
	Venezuela, Colombia, Ecuador, Bolivia, Chile, Argentina, Brazil, Uruguay	Time-Location Sampling/Venue-based sampling	13,600	1.2	Seroprevalence of and risk factors for HIV-1 infection among female commercial sex workers in South America	Bautista	2006
Middle East and North	Egypt	Respondent driven sampling	118	0.8	HIV/AIDS Biological and Behavioral Surveillance Survey	(National Report)	2006
	Egypt	Respondent	200	0.0	HIV/AIDS Biological and Behavioral Surveillance Survey	(National	2010



Region	Country(ies)	Sampling Method	Sample Size	HIV Prevalence	Title	Author	Year of publication
Africa		driven sampling				Report)	
	Egypt	Time-Location Sampling/Venue-based sampling	431	0.0	HIV infection and risk related behaviours among female sex workers in greater Cairo, Egypt	Kabbash	2012
	Iran	NR	817	4.5	HIV Bio-Behavioral surveillance among female sex workers Iran - 2010	(National Report)	2010
	Iran	Respondent driven sampling	177	0.0	HIV, HSV2 and Syphilis Prevalence in Female Sex Workers in Kerman, South-East Iran; Using Respondent-Driven Sampling	Navadeh	2012
	Iran	Probability sampling	91	0.0	HIV and other sexually transmitted infections in women with illegal social behavior in Isfahan, Iran	Kassaian	2012
	Iran	Clinic/Facility-based sampling	872	3.4	HIV prevalence and related risk behaviours among female sex workers in Iran: results of the national biobehavioural survey, 2010	Sajadi	2013
	Iran	Respondent driven sampling	278	4.7	The prevalence of human immunodeficiency virus and sexually transmitted infections among female sex workers in Shiraz, South of Iran: by respondent-driven sampling	Kazerooni	2014
	Iran	Clinic/Facility-based sampling	872	4.5	HIV and Related Risk Behaviors Among Female Sex Workers in Iran: Bias-Adjusted Estimates from the 2010 National Bio-Behavioral Survey	Mirzazadeh	2014
	Iran	Clinic/Facility-based sampling	748	4.0	Correlates of HIV Testing among Female Sex Workers in Iran: Findings of a National Bio-Behavioural Surveillance Survey	Shokoohi	2016
	Lebanon	NR	150	0.0	'Mishwar' An Integrated Bio-Behavioral Surveillance Study Among Most At Risk Populations In Lebanon: Female Sex Workers, Injecting Drug Users, Men Who Have Sex With Men, and Prisoner	(National Report)	2008
	Lebanon	Respondent driven sampling	135	0.0	HIV/AIDS among female sex workers, injecting drug users and men who have sex with men in Lebanon: results of the first biobehavioral surveys	Mahfoud	2010
	Libya	Respondent driven sampling	69	10.1	Filling the Knowledge Gap: Measuring HIV Prevalence and Risk Factors among Men Who Have Sex with Men and Female Sex Workers in Tripoli, Libya.	Valadez	2013
	Morocco	Respondent driven sampling	1,447	2.1	Using Respondent-Driven Sampling to Estimate HIV and Syphilis Prevalence among Female Sex Workers in Agadir, Res, Rabat and Tangier, Morocco	Johnston	2013
Middle East and North Africa	Somalia	Respondent driven sampling	237	5.1	HIV prevalence and characteristics of sex work among female sex workers in Hargeisa, Somaliland, Somalia	Kriitmaa	2010
	Sudan	Respondent driven sampling	321	0.9	HIV prevalence and risk behaviors of female sex workers in Khartoum, north Sudan	Abdelrahim	2010
	Sudan	Respondent driven sampling	4,220	1.5	Integrated bio-behavioural HIV surveillance surveys among female sex workers in Sudan, 2011-2012	Elhadi	2013
	Tunisia	Clinic/Facility-based sampling	188	0.0	Sexually transmitted infections among female sex workers in Tunisia: high prevalence of Chlamydia trachomatis	Znazen	2010

Region	Country(ies)	Sampling Method	Sample Size	HIV Prevalence	Title	Author	Year of publication
	Yemen	NR	244	1.6	HIV bio-behavioural survey among FSWs in Aden, Yemen, 2008	Stulhofer	2008
	Benin	Clinic/Facility-based sampling	182	28.6	Differences in immunoregulatory cytokine expression patterns in the systemic and genital tract compartments of HIV-1-infected commercial sex workers in Benin	Lajoie	2008
	Benin	Time-Location Sampling/Venue-based sampling	387	37.0	Factors Influencing Cervical Infection Among Female Sex Workers in Benin	Diabate	2011
	Benin	Clinic/Facility-based sampling	396	37.6	Condom Use During Work Time Among Female Sex Workers in Benin	Diabate	2011
	Benin	NR	1,186	2.2	Implementing for results: Program analysis of the HIV/STI intervention for sex workers in Benin	Semini	2013
West and Central Africa	Benin, Ghana, Nigeria, Togo	Probability sampling	2,655	40.5	Decline in the Prevalence of HIV and Sexually Transmitted Infections Among Female Sex Workers in Benin Over 15 Years of Targeted Interventions	Behanzin	2013
	Benin	NR	367	32.7	Sexual behaviour after antiretroviral therapy initiation in female sex workers and HIV-positive patients from the general population, Cotonou, Benin	Diabaté	2013
	Benin	Probability sampling	981	20.4	Violence, Condom Breakage, and HIV Infection Among Female Sex Workers in Benin, West Africa	Tounkara	2014
	Benin	Clinic/Facility-based sampling	240	22.9	Early Antiretroviral Therapy and Pre-Exposure Prophylaxis for HIV Prevention Among Female Sex Workers in Cotonou, Benin: Early Follow-Up and Adherence Data	Guédou	2015
	Benin	Time-Location Sampling/Venue-based sampling	276	1.8	Outreach Strategies for the Promotion of HIV Testing and Care: Closing the Gap Between Health Services and Female Sex Workers in Benin	Dugas	2015
	Burkina Faso, Togo	Respondent driven sampling	1,349	19.2	Safer Conception Needs for HIV Prevention among Female Sex Workers in Burkina Faso and Togo	Schwartz	2014
	Burkina Faso	Respondent driven sampling	349	8.9	Structural Determinants of Health Among Women Who Started Selling Sex as Minors in Burkina Faso	Grosso	2015
	Burkina Faso	Respondent driven sampling	696	21.0	Mothers Who Sell Sex: A Potential Paradigm for Integrated HIV, Sexual, and Reproductive Health Interventions Among Women at High Risk of HIV in Burkina Faso	Papworth	2015
West and Central Africa	Burkina Faso	Time-Location Sampling/Venue-based sampling	321	0.0	HIV prevention and care services for female sex workers: efficacy of a targeted community-based intervention in Burkina Faso	Traore	2015
	Burkina Faso, Togo, Swaziland	Respondent driven sampling	1,666	28.9	Reproductive health needs of female sex workers and opportunities for enhanced prevention of mother-to-child transmission efforts in sub-Saharan Africa	Schwartz	2015
	Burkina Faso, Togo	Respondent driven sampling	1,383	10.6	Using Population-Size Estimation and Cross-sectional Survey Methods to Evaluate HIV Service Coverage Among Key Populations in Burkina Faso and Togo	Holland	2016

Region	Country(ies)	Sampling Method	Sample Size	HIV Prevalence	Title	Author	Year of publication
West and Central Africa	Burkina Faso	NR	609	7.6	HIV risk and behaviour among part-time versus professional FSW: baseline report of an interventional cohort in Burkina Faso	Traore	2016
	Burundi	NR	495	21.2	Burundi PLACE Report: Priorities for Local AIDS Control Efforts	(National Report)	2014
	Cameroon	Other	1,005	26.4	Human Immunodeficiency Virus Infection and Associated Factors among Specific Population Subgroups in Cameroon	Mosoko	2009
	Cameroon	NR	1,601	5.1	Antiretroviral Treatment Coverage for Men Who Have Sex with Men and Female Sex Workers Living with HIV in Cameroon	Holland	2015
	Cameroon	Snowball sampling	1,817	4.5	Gender-based violence against female sex workers in Cameroon: prevalence and associations with sexual HIV risk and access to health services and justice	Decker	2016
	Cote d'Ivoire	Clinic/Facility-based sampling	1,110	24.0	HIV and STI prevalence among female sex workers in Cote d'Ivoire: why targeted prevention programs should be continued and strengthened	Vuylsteke	2012
	Cote d'Ivoire	Respondent driven sampling	466	10.7	An Urgent Need for Integration of Family Planning Services Into HIV Care: The High Burden of Unplanned Pregnancy, Termination of Pregnancy, and Limited Contraception Use Among Female Sex Workers in Co'te d'Ivoire	Schwartz	2015
	Democratic Republic of Congo	Clinic/Facility-based sampling	502	12.4	HIV and other sexually transmitted infections among female sex workers in Kinshasa, Democratic Republic of Congo, in 2002	Vandepitte	2007
	Democratic Republic of Congo	Time-Location Sampling/Venue-based sampling	65	27.7	Local Differences in Human Immunodeficiency Virus Prevalence: A Comparison of Social Venue Patrons, Antenatal Patients, and Sexually Transmitted Infection Patients in Eastern Kinshasa	Mwandagalirwa	2009
	Ghana	Clinic/Facility-based sampling	150	20.0	Aetiological agents of infective vaginal discharge among women attending a STD clinic in Kumasi, Ghana	Agyarko-Poku	2011
	Guinea	Clinic/Facility-based sampling	223	35.4	Biological Validation of Self-Reported Condom Use Among Sex Workers in Guinea	Aho	2010
	Liberia	NR	547	6.0	Integrated Bio-Behavioural Surveillance Survey (IBBSS) among MARPs in Liberia 2013	(National Report)	2013
	Nigeria	NR	3,274	33.6	HIV/STI Integrated Biological and Behavioural Surveillance Survey (IBBSS)	(National Report)	2007
	Nigeria	Time-Location Sampling/Venue-based sampling	398	48.5	Prevalence of HIV and other sexually transmissible infections in relation to lemon or lime juice douching among female sex workers in Jos, Nigeria	Imade	2008
	Nigeria	Clinic/Facility-based sampling	99	39.4	Human immunodeficiency virus (HIV) specific antibodies among married pregnant women and female commercial sex workers attending voluntary counseling and HIV testing (VCT) centre in Abuja, Nigeria	Sule	2009
	Nigeria	NR	4,459	24.3	HIV Integrated Biological and Behavioural Surveillance Survey (IBBSS)	(National	2010

Region	Country(ies)	Sampling Method	Sample Size	HIV Prevalence	Title	Author	Year of publication
West and Central Africa West and Central Africa West and Central Africa West and Central Africa West and Central Africa	Nigeria	Time-Location Sampling/Venue-based sampling	900	37.2	Estimates of human immunodeficiency virus incidence among female sex workers in north central Nigeria: implications for HIV clinical trials	Forbi	2011
		Other	5,860	20.6	Sexual Risk Behaviors and HIV Among Female Sex Workers in Nigeria	Eluwa	2012
		Time-Location Sampling/Venue-based sampling	194	44.8	Seroprevalence of HIV Infection Among Female Sex Workers Using Lime/Lemon Juice for Vaginal Douching	Kullima	2012
		Time-Location Sampling/Venue-based sampling	124	25.8	Risk Perceptions, Prevention and Treatment Seeking for Sexually Transmitted Infections and HIV/AIDS among Female Sex Workers in Kano, Nigeria	U M	2012
		Clinic/Facility-based sampling	1,590	41.9	HIV counseling and testing and access-to-care needs of populations most-at-risk for HIV in Nigeria	Ahmed	2013
		Outreach sampling	250	25.6	Diverse Genetic Subtypes of HIV-1 Among Female Sex Workers in Ibadan, Nigeria	Fayemiwo	2014
		NR	8,049	14.1	Integrated Biological and Behavioral Surveillance Survey	(National Report)	2014
	Republic of Congo	Respondent driven sampling	805	7.5	A study on HIV, Syphilis, and Hepatitis B and C virus infections among female sex workers in the Republic of Congo	Niama	2017
	Senegal	Other	1,052	19.8	HIV prevalence, previous HIV testing, and condom use with clients and regular partners among Senegalese commercial sex workers.	Wang	2007
	Senegal	Clinic/Facility-based sampling	3,910	7.4	Twenty Years of Prospective Molecular Epidemiology in Senegal: Changes in HIV Diversity	Hamel	2007
	Senegal	Clinic/Facility-based sampling	604	20.2	Concentrated and linked epidemics of both HSV-2 and HIV-1/HIV-2 infections in Senegal: public health impacts of the spread of HIV	Kane	2009
	The Gambia	Time-Location Sampling/Venue-based sampling	251	15.9	A cross-sectional evaluation of the prevalence and associations of HIV among female sex workers in the Gambia	Peitzmeier	2013
	Togo	Snowball sampling	1,311	36.2	A Tale of Two Countries: HIV Among Core Groups in Togo	Sobela	2009
	Togo, Burkina Faso	Respondent driven sampling	1,380	19.7	Sexual Violence, Condom Negotiation, and Condom Use in the Context of Sex Work: Results From Two West African Countries	Wirtz	2015
	Togo	Time-Location Sampling/Venue-based sampling	1,106	14.9	Prevalence of syphilis among female sex workers and their clients in Togo in 2011	Halatoko	2017

Region	Country(ies)	Sampling Method	Sample Size	HIV Prevalence	Title	Author	Year of publication
Western and Central Europe and North America	Canada	Outreach sampling	154	14.3	The Cedar Project: A comparison of HIV-related vulnerabilities amongst young Aboriginal women surviving drug use and sex work in two Canadian cities	Mehrabadi	2008
	Canada	Time-Location Sampling/Venue-based sampling	205	7.3	Structural and Environmental Barriers to Condom Use Negotiation With Clients Among Female Sex Workers: Implications for HIV-Prevention Strategies and Policy	Shannon	2009
	Canada	Time-Location Sampling/Venue-based sampling	251	21.9	Prevalence and structural correlates of gender based violence among a prospective cohort of female sex workers	Shannon	2009
	Canada	Time-Location Sampling/Venue-based sampling	255	22.4	Individual and Structural Vulnerability Among Female Youth Who Exchange Sex for Survival	Miller	2011
	Canada	Time-Location Sampling/Venue-based sampling	387	9.8	High Prevalence and Partner Correlates of Physical and Sexual Violence by Intimate Partners among Street and Off-Street Sex Workers	Argento	2014
	Canada	Time-Location Sampling/Venue-based sampling	508	11.2	Early sex work initiation independently elevates odds of HIV infection and police arrest among adult sex workers in a Canadian setting	Goldenberg	2014
	Canada	Time-Location Sampling/Venue-based sampling	646	21.1	Complexities of Short-Term Mobility for Sex Work and Migration among Sex Workers: Violence and Sexual Risks, Barriers to Care, and Enhanced Social and Economic Opportunities	Goldenberg	2014
	Canada	Time-Location Sampling/Venue-based sampling	225	28.4	Generational Sex and HIV Risk Among Indigenous Women In A Street-Based Urban Canadian Setting	Bingham	2014
	Canada	Time-Location Sampling/Venue-based sampling	650	11.5	International Migration from Non-endemic Settings as a Protective Factor for HIV/STI Risk Among Female Sex Workers in Vancouver, Canada	Goldenberg	2015
	Canada	Time-Location Sampling/Venue-based sampling	692	11.3	Prevalence and correlates of nonmedical prescription opioid use among a cohort of sex workers in Vancouver, Canada	Argento	2015
Western and Central Europe and North America	Canada	Time-Location Sampling/Venue-based sampling	399	10.8	Sex Work and Motherhood: Social and Structural Barriers to Health and Social Services for Pregnant and Parenting Street and Off-Street Sex Workers	Duff	2015
	Canada	Clinic/Facility-based sampling	151	15.2	Sex Work as an Emerging Risk Factor for Human Immunodeficiency Virus Seroconversion Among People who Inject Drugs in the SurvUDI Network	Blouin	2016
	Canada	Time-Location Sampling/Venue-	611	10.3	Barriers to Cervical Screening Among Sex Workers in Vancouver	Duff	2016

Region	Country(ies)	Sampling Method	Sample Size	HIV Prevalence	Title	Author	Year of publication
Western and Central Europe and North America	Canada	based sampling Time-Location Sampling/Venue-based sampling	723	11.2	Universal Coverage without Universal Access: Institutional Barriers to Health Care among Women Sex Workers in Vancouver, Canada	Sociás	2016
	Canada	Time-Location Sampling/Venue-based sampling	654	11.5	Social Cohesion Among Sex Workers and Client Condom Refusal in a Canadian Setting: Implications for Structural and Community-Led Interventions	Argento	2016
	Canada	Time-Location Sampling/Venue-based sampling	198	26.3	Sexual and Drug-related Vulnerabilities for HIV Infection Among Women Engaged in Survival Sex Work in Vancouver, Canada	Shannon	2017
	Czechia	Time-Location Sampling/Venue-based sampling	585	0.7	Short Report: HIV Infection Among Commercial Sex Workers and Injecting Drug Users in the Czech Republic	Bruckova	2006
	Estonia	Respondent driven sampling	227	7.0	A study on HIV and hepatitis C virus among commercial sex workers in Tallinn	Uuskula	2008
	Germany	Clinic/Facility-based sampling	9,284	0.1	STI tests and proportion of positive tests in female sex workers attending local public health departments in Germany in 2010/11	Bremer	2016
	Italy	Outreach sampling	118	0.0	Prevalence of HIV and Other Sexually Transmitted Diseases among Columbian and Dominican Female Sex Workers Living in Catania, Easter Sicily	Nigro	2006
	Italy	Outreach sampling	345	4.6	Prevalence of Sexually Transmitted Diseases and Hepatitis C in a Survey of Female Sex Workers in the North-East of Italy	Zermiani	2012
	Kosovo	Respondent driven sampling	157	0.0	2006 Behavioral and Biological Surveillance Study Kosovo February 2006-July 2006	(National Report)	2007
	Netherlands	Time-Location Sampling/Venue-based sampling	487	3.7	HIV and Sexual Risk Behavior among Commercial Sex Workers in the Netherlands	van Veen	2010
	Netherlands	Clinic/Facility-based sampling	36,164	0.2	Sexually transmitted infections among female sex workers tested at STI clinics in the Netherlands, 2006-2013	Verscheijden	2015
	Portugal	Time-Location Sampling/Venue-based sampling	853	5.9	Risk-taking behaviours and HIV infection among sex workers in Portugal: results from a cross-sectional survey	Dias	2015
	Serbia	NR	85	0.0	Project: Research Among Groups Under the HIV/AIDS Risk and Among People Living with HIV	(National Report)	2008
	Serbia	NR	155	0.6	Scaling up the National HIV/AIDS Response by Decentralizing the Delivery of Key Services	(National Report)	2010
	Spain	Clinic/Facility-based sampling	301	1.0	Sexually transmitted Chlamydia trachomatis, Neisseria gonorrhoeae, and HIV-1 infections in two at-risk populations	Vall-Mayans	2007

Region	Country(ies)	Sampling Method	Sample Size	HIV Prevalence	Title	Author	Year of publication
Western and Central Europe and North America					in Barcelona: female street prostitutes and STI clinic attendees.		
	Spain	Time-Location Sampling/Venue-based sampling	357	0.8	Prevalence of Human Immunodeficiency Virus, Chlamydia trachomatis, and Neisseria gonorrhoeae and Risk Factors for Sexually Transmitted Infections Among Immigrant Female Sex Workers in Catalonia, Spain	Folch	2008
	Spain	Time-Location Sampling/Venue-based sampling	121	3.3	Enhanced retention strategies and willingness to participate among hard-to-reach female sex workers in Barcelona for HIV prevention and vaccine trials	Etcheverry	2013
	Spain	NR	1,969	0.8	Serving the underserved: an HIV testing program for populations reluctant to attend conventional settings	Fernandez-Balbuena	2015
	Switzerland	Time-Location Sampling/Venue-based sampling	50	4.0	Suboptimal access to primary healthcare among street-based sex workers in southwest Switzerland	Anna Darling	2013
	United Kingdom	Clinic/Facility-based sampling	120	5.0	Sexually transmitted infections among UK street-based sex workers	Creighton	2008
	United Kingdom	Outreach sampling	268	1.1	Risk of sexually transmitted infections and violence among indoor-working female sex workers in London: the effect of migration from Eastern Europe	Platt	2013
	United Kingdom	Clinic/Facility-based sampling	185	1.1	Sex work amongst people who inject drugs in England, Wales, and Northern Ireland: Findings from a National Survey of Health Harms and Behaviours	Croxford	2015
	United States of America	Probability sampling	338	7.1	Patterns of sexual commerce among women in US Syringe Exchange Programs	Braine	2006
	United States of America	Outreach sampling	586	20.5	HIV, HBV, and HCV Infections Among Drug-Involved, Inner-City, Street Sex Workers in Miami, Florida	Inciardi	2006
	United States of America	Clinic/Facility-based sampling	419	0.7	Sex worker health: San Francisco style	Cohan	2006
	United States of America	Time-Location Sampling/Venue-based sampling	104	4.8	Exploring HIV Prevention Utilization Among Female Sex Workers and Male-to-Female Transgenders	Harawa	2009
	United States of America	Outreach sampling	806	19.4	An Effective HIV Risk Reduction Protocol for Drug-Using Women Sex Workers	Surratt	2010
	United States of America	Snowball sampling	562	18.3	Foster Care History and HIV Infection among Drug-Using African American Female Sex Workers	Surratt	2012
	United States of America	Clinic/Facility-based sampling	1,277	23.1	Sex trade among young women attending family-planning clinics in Northern California	Decker	2012
	United States of America	Clinic/Facility-based sampling	700	10.9	Female sex workers incarcerated in New York City jails: prevalence of sexually transmitted infections and associated risk behaviors	Parvez	2013
	United States	Probability	562	18.1	Outcomes of a Behavioral Intervention to Reduce HIV Risk Among Drug-involved Female Sex Workers	Surratt	2014

Region	Country(ies)	Sampling Method	Sample Size	HIV Prevalence	Title	Author	Year of publication
	of America	sampling					
	United States of America	Time-Location Sampling/Venue-based sampling	92	7.6	HIV Prevalence and Risk Behaviors Among African American Women Who Trade Sex for Drugs Versus Economic Resources	Dunne	2014
Global	Benin, Uganda, India	Time-Location Sampling/Venue-based sampling	1,367	27.0	Association between prevalent bacterial vaginosis (bv) and HIV infection among female sex workers at two African and two Indian sites	Guedou	2011



## 2. Search Strategy - Mathematical Modeling Studies.

We aimed to identify progresses in the field of mathematical modeling for sex work by identifying new mathematical modeling studies of structural determinants/interventions published since our last 2014 Lancet review.

On 08.06.2018 both the Embase and MEDLINE databases were searched to identify studies on female sex workers published between 1<sup>st</sup> January 2014 and 31<sup>st</sup> December 2017, using Ovid. The search was limited to articles, which had been published in English, using the following search terms:

MEDLINE	
1.	(sex work* or commercial sex or prostitut*).ab,ti. or Sex Workers/ or Sex Work/
2.	limit 1 to yr="2014 – 2017"
Embase	
1.	(sex work* or commercial sex or prostitut*).ab,ti. or sex worker/ or prostitution/
2.	limit 1 to yr="2014 – 2017"

**Inclusion Criteria:** We screened relevant articles identified by our initial search by title and abstract to identify 1) original studies focusing on female sex workers, 2) the subset of studies on FSWs that were mathematical modeling studies of infections, and 3) the subset of mathematical modeling studies that explicitly modeled structural determinants (i.e. factors that are not defined at the level of individual but can influence transmission of STI, HIV or other infectious diseases) or structural interventions to explicitly assess their impact on disease transmission (e.g. decriminalization, incarceration, violence, stigma, community empowerment).

We included studies that focused on female sex work and excluded studies that solely focused on transgender sex workers, male sex workers or adolescent sex workers (< 20 years). We only included studies that included original mathematical modeling results and excluded reviews, reports or conference abstracts, and epidemiological studies.

### Search Results

The searches on Embase (N=2542) and MEDLINE (N= 1863) returned a total of 4405 articles. After removing duplicates, 2691 articles remained, of which 711 articles matched the FSW inclusion criteria for original studies on FSWs, of which 34 were mathematical modeling studies (table). Only 2 of these mathematical modeling studies explicitly modeled and/or examine the impact of structural determinants as defined above.

**Appendix Table 2: Shows the number of articles, which met each set of inclusion criteria by publication year.**

Initial results from the searches : Number of unique studies : 2691	Publication Year				Total
	2014	2015	2016	2017	
1. Original studies focused on FSW	165	212	151	183	711
2. Subset of Modeling study	10	11	7	8	34
3. Subset of modeling studies focusing on structural determinants	2	0	0	0	2